2025

ISO 14046:2014

ÇEL-MER ÇELİK END. A.Ş.

Water Footprint Inventory Report

This report has been prepared in accordance with ISO 14046:2014 and contains the results of a water footprint analysis conducted to determine the environmental impact of ÇEL-MER ÇELİK END. A.Ş.'s water use.

CONTENTS

1. INTRODUCTION

This report provides a comprehensive assessment of the water footprint of ÇEL-MER ÇELİK END. A.Ş.'s activities.

Organization Name	**: ÇEL-MER ÇELİK END. A.Ş.**
Organization/Branch Address	**: Sekerpinar Mah. Menekse Sk. No:8 Cayirova Kocaeli Kocaeli/Türkiye**
Sector	**: Metal Industry (General Iron and Steel Production)**
Partnership Status	**: Abdurrahman Yılmaz (90.20%) , Meryem Yılmaz Kılıç (3.90%) , Anna Yılmaz (5.80%) , Gürsan Can (0.10%)**

1.1 Company Description

1.2. Report Information

Report Date	**: 26/01/2026**
Reporting Standard	**: Based on ISO 14046:2014 standard**
Base Year	**: 2025**
Reporting Interval	**: 01.01.2025 - 31.12.2025**
Person Responsible for the Report	**: Meryem Yılmaz**
Responsible Person E-Mail	**: info@celmercelik.com**

1.3. Compliance with ISO 14046:2014 Standard

This study has been prepared in accordance with the ISO 14046:2014 standard “Environmental Management - Water Footprint - Principles, Requirements and Guidelines” and covers the topics specified in Article 6.2 of the standard.

In the study, the “Water Footprint Assessment Manual” methodology developed by Hoekstra et al. was used for water footprint assessment and Blue, Green and Gray water footprints were calculated.

2. PURPOSE OF THE STUDY

This report has been prepared for **ÇEL-MER ÇELİK END. A.Ş.** in order to achieve water use and water management targets. The main objective of the study:

- To provide the necessary infrastructure to analyze the traceability of water use and to improve monitoring systematics where necessary,
- To set targets for reducing water use,
- Identify and assess the organization's corporate risks and opportunities related to water,
- To provide data for sustainability reports and environmental management studies.

2.1. Target Audience

This report is intended for all internal and external stakeholders with an interest in ÇEL-MER ÇELİK END. A.Ş.'s water management and environmental sustainability. In particular, the target audience includes the company's senior management, environmental and sustainability departments, regulatory bodies, investors, customers and other interested parties who want to be informed about water resources management. This report aims to provide guidance on assessing water footprint performance and developing water management strategies.

3. SCOPE OF THE STUDY

The organizational boundaries of the ÇEL-MER ÇELİK END. A.Ş. water footprint inventory study cover the activities performed in all departments at Sekerpinar Mah. Menekse Sk. No:8 Cayirova Kocaeli. These activities include:

- Production Processes
- Domestic Use

The study covers the following phases in accordance with the requirements of ISO 14046:2014 Standard:

- Determination of purpose and scope
- Water footprint inventory analysis

3.1. System Boundaries

The system boundaries used in the water footprint study of ÇEL-MER ÇELİK END. A.Ş. define which processes, activities and inputs are considered in the water footprint assessment. The system boundaries clarify the scope of the study for the assessment of water use and water-related environmental impacts and are defined to cover the activities of ÇEL-MER ÇELİK END. A.Ş. at Ra. These boundaries include production processes, domestic water use and other sources of water consumption, and direct water footprint results were analyzed in the water footprint calculation. The data used in the water footprint study was selected and evaluated in accordance with the requirements of the ISO 14046:2014 standard, and this approach ensures an accurate and comprehensive calculation of the water footprint.

3.1.1. Determination of Process Boundaries

ÇEL-MER ÇELİK END. A.Ş., blue water, gray water footprint analyses were carried out within the scope of water footprint calculation studies. In these analyses, the components of the water footprint were discussed in detail and the environmental impacts of business activities were comprehensively evaluated.

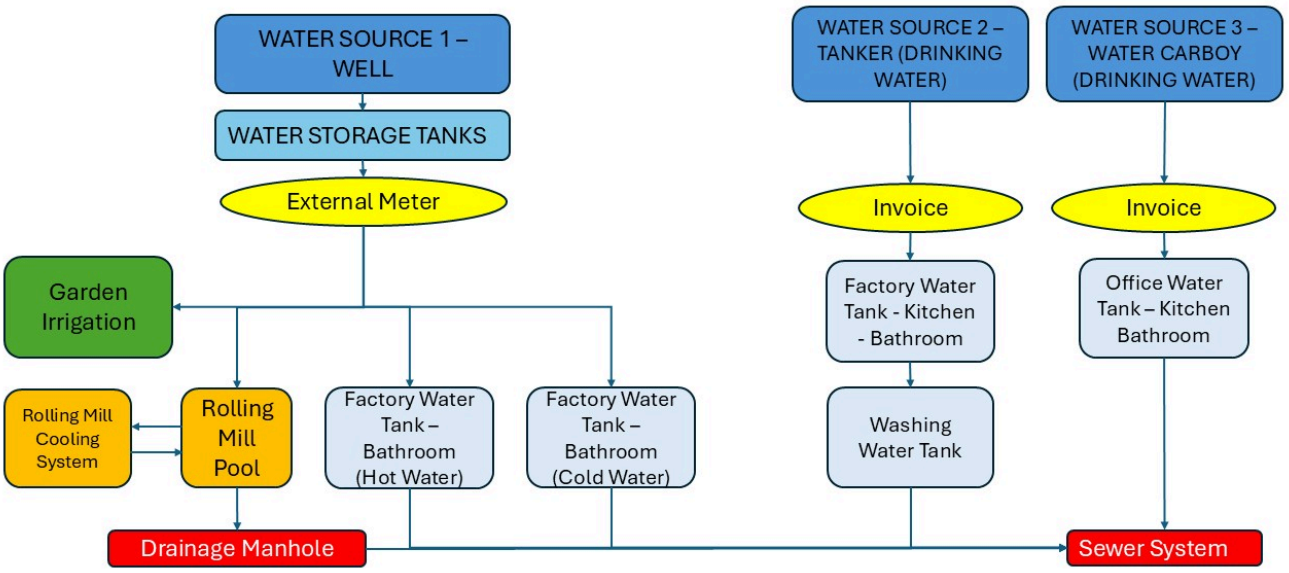
4. WATER FOOTPRINT INVENTORY ANALYSIS

This section provides a detailed analysis of ÇEL-MER ÇELİK END. A.Ş.'s water footprint inventory. The water footprint inventory covers the data collection and calculation processes undertaken to assess the company's water use and water-related environmental impacts. This analysis aims to provide important data for the sustainable management of water resources and to better understand the impacts of water supply.

4.1. Water Usage Areas

Inside the factory, we use the water for drinking, for the kitchen, toilet and bathing needs of the personnel, and for cooling in the rolling mill during production.

WATER FLOW DIAGRAM



Graph 1 - Water Flow Diagram

4.2. Data Collection

Our main water source is well water; the water we use from the well is metered and billed to us. We also have bottled water for drinking purposes. We obtain water for general use via tanker trucks.

4.3. Data Verification

The data validation process is conducted to ensure the reliability and accuracy of water footprint calculations. This process assesses the quality, completeness and overall appropriateness of the data used. Data validation ensures that analyses produce robust and valid results.The data validation process is conducted to ensure the reliability and accuracy of water footprint calculations. This process assesses the quality, completeness and overall appropriateness of the data used. Data validation ensures that analyses produce robust and valid results.

4.3.1. Data Quality Requirements

The quality requirements for the data used in water footprint calculations include the following elements:

- **Time Dependent Scope** : The time period represented by the data and its timeliness.
- **Geographical Scope** : The extent of the geographical area where data was collected to achieve the study's objective.
- **Technological Scope** : The type of technologies that generate and measure data.
- **Certainty** : A measure of the variability of the data, e.g. variance
- **Completeness** : Percentage completeness of measured or estimated data.
- **Consistency** : Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis.
- **Data Source** : Data type and uncertainty value.

4.3.2. Data Quality Assessment

In water footprint calculations, primary data are used for the highest possible accuracy, and secondary data derived from assumptions and assumptions are used in case of data gaps.

Field	Amount	Data Source
Mains water	0.00 m³	Invoice
Total carboy water (including bottled and glass water)	19.80 m³	Invoice
Well water	4,776.00 m³	Invoice
TANKER	56.13 m³	Fresh Water
Wastewater	4,776.00 m³/year	Fatura
Industrial wastewater	-	-
Rainwater used	0.00 m³	-

Field	Amount	Data Source
Rainwater per m² of open area during the year	0.00 mm	-

5. DESCRIPTIONS

This section explains the terms and formulas used in water footprinting. Water footprint is an important tool for understanding and managing the environmental impacts of water use. In this context, the definitions and calculation methods of blue, green and gray water footprints are given below.

5.1. Blue Water Footprint

The blue water footprint refers to the amount of water used directly from water sources (rivers, lakes, groundwater). This represents the withdrawal of water when water is incorporated into a product, service or process.

Description : The blue water footprint covers the use of water from surface water and groundwater sources and calculates the amount of water used at all stages of a product, service or process.

5.2. Green Water Footprint

The green water footprint refers to the rainwater used for plant growth. It covers the amount of water absorbed by the soil and used by plants, and assesses the processes through which water takes part in the natural cycle.

Description : The green water footprint is the use of water absorbed by natural rainfall and soil for the growth of plants. It calculates the amount of water consumed by plants from natural water sources.

5.3. Gray Water Footprint

The gray water footprint refers to the amount of water that needs to be cleaned up as a result of water contamination. It calculates the amount of water that needs to be cleaned up as a direct or indirect result of water contaminated by a product or process.

Description : The gray water footprint refers to the amount of water that needs to be cleaned up due to pollution. This is used to understand the extent of water contamination and its environmental impact.

6. CALCULATION METHODOLOGY

6.1. Blue Water Footprint Calculation

Total Amount of Water Consumed in Process and Domestic (m³)	Total amount of carboy water (including bottled and glass water) (m³)	Well Water Usage (m³)	Total (m³/year)
0.00	19.80	4,776.00	4,795.80

6.2. Green Water Footprint Calculation

Amount of Rainwater Used (m³)	Amount of rainwater per m² of open area during the year (m³)	Total (m³/year)
0.00	0.00	0.00

6.3. Gray Water Footprint Calculation

$$WF_{OP,\ GRI} = \frac{L}{C_{MAX} - C_{NAT}} \quad \textbf{x [volume/time]}$$

L: Pollutant load [mass/time]

$\mathbf{C_{MAX}}$: Receiving water quality standard (maximum permissible concentration) [mass/volume]

$\mathbf{C_{NAT}}$: Natural concentration of the receiving environment [mass/volume]

6.3.1. Acceptances and Limits

- Water pollution control regulation values were accepted as Cmax.
- Since the pollutant concentration of the receiving environment is not clearly known, Cnat=0 is assumed. (Source: The Water Footprint Assessment Manual)
- The uncertainty of the meter used to measure the mains water is taken from the regulation on measuring instruments. If the water temperature is below 30 °C, the uncertainty value is accepted as 2% and if the water temperature is above 30 °C, the uncertainty value is accepted as 3%.
- For the results of the green water footprint, the uncertainty value is accepted as 5% with a 95% confidence interval.
- For the results of the gray water footprint, the uncertainty value is accepted as 5% with a 95% confidence interval.
- Since wastewater analysis data was not available, sector average pollutant concentrations were used in the greywater footprint calculation.

Amount of Waste Water (m³/year)	Industrial Waste Water Amount	Receiving Environment of Wastewater	Total (m³/year)
4,776.00	-	Sewerage System and Treatment Plant	4,776.00

Parameter	Composite Sample Data		Result (m³/year)
	Pollutant concentration (mg/L)	Maximum dischargeable pollution concentration / Cmax (mg/L)	
Lead (Pb)	0.50	0.50	4,776.00
Chemical Oxygen Demand (COD)	90.00	90.00	4,776.00

Parameter	Composite Sample Data		Result (m^3/year)
	Pollutant concentration (mg/L)	Maximum dischargeable pollution concentration / Cmax (mg/L)	
Iron (Fe)	20.00	20.00	4,776.00
Zinc (Zn)	4.00	4.00	4,776.00
Oil and Grease	20.00	20.00	4,776.00
Settleable Solid Matter	0.50	0.50	4,776.00

7. UNCERTAINTY ASSESSMENT

Area	Water Footprint	Uncertainty value	U*X (Flow rate*Uncertainty)	(U*X)^2	Total uncertainty √(U*X)^2 / Total flow rate	Total uncertainty (%)
Blue Water Footprint						
Mains water	0.00	0.02	0.00	0.00	0.0492	%4.92
Total carboy water (including bottled and glass water)	19.80	0.05	0.99	0.98		
Well water	4,776.00	0.05	238.80	57,025.44		
TANKER	56.13	0.05	2.81	7.88		
Green Water Footprint						
Rainwater used	0.00	0.05	0.00	0.00	-	-
Gray Water Footprint						
Amount of wastewater	4,776.00	0.05	238.80	57,025.44	0.05	%5.00

Reference: Measuring instruments regulation

8. CALCULATION RESULTS

Facility Name	Blue Water Footprint	Green Water Footprint	Gray Water Footprint	Total Water Footprint	Unit
Merkez Birim	4,795.80	0.00	4,776.00	9,571.80	m^3/year